DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 99.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-019009
Date Inspected: 31-Dec-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC)

OSM Arrival Time: 700
OSM Departure Time: 1900
Location: Shanghai, China

CWI Name: Li Yang and Zhu Zhong Hai

CWI Present:	☑ Yes	☐ No						
Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A	
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A	
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A	
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A	

Bridge No: 34-0006
Component: OBG Trial Assembly

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) at Trial Assembly Areas

Segment 11BW (FL3 to Bottom Plate)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Bottom Plate to FL3 Flange and Bottom Panel to Bottom Plate at Panel Points (PP) 98, PP 99 and PP 100 for Segment 11BW. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00588.

The bolt sizes used were M24 x 60 RC Lot # DHGM240001 and the final torque value established was 633 N-m.

The bolt sizes used were M24 x 65 RC Lot # DHGM240002 and the final torque value established was 573 N-m.

The bolt sizes used were M24 x 65 RC Lot # DHGM240002 and the final torque value established was 1300 N-m.

The bolt sizes used were M24 x 70 RC Lot # DHGM240010 and the final torque value established was 1200 N-m.

The Manual Torque wrench used was Serial No. XO2-676 and XO2-872.

Please reference the pictures attached for more comprehensive details.

Segment 11DW (FL3 to Bottom Plate)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the Bottom Plate to FL3 Flange and Bottom Panel to Bottom Plate at Panel Points (PP) 104, PP 105 and PP 106 for Segment 11DW. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00589.

The bolt sizes used were M24 x 60 RC Lot # DHGM240001 and the final torque value established was 633 N-m.

The bolt sizes used were M24 x 65 RC Lot # DHGM240002 and the final torque value established was 573 N-m.

The bolt sizes used were M24 x 65 RC Lot # DHGM240002 and the final torque value established was 1300 N-m.

The bolt sizes used were M24 x 70 RC Lot # DHGM240010 and the final torque value established was 1200 N-m.

The Manual Torque wrench used was Serial No. XO2-676 and XO2-872.

Please reference the pictures attached for more comprehensive details.

Bike Path at Bay # 10

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path are identified as:

BK004A-031.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using 1500mm long straight edge between the stiffeners which are plug weld to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Supervisor Mr. Xu Le Feng, ABF Mr. Man Kam Hon and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Bike Path at Bay # 11

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path

are identified as:

BK004A-019.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using 1500mm long straight edge between the stiffeners which are plug weld to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Supervisor Mr. Xu Le Feng, ABF Mr. Man Kam Hon and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Lift 11 West (X37B Brackets, Road Barrier)

This QA Inspector performed Dimension Control Inspection for the Segment 11AE, Segment 11BE, Segment 11CE, Segment 11DE and Segment 11EE and measured the distance between Road Barrier bolt holes drilled at X37B from deck panel to the cope hole at X37B bracket installed at Corner Assembly Cross Beam and Bike Path side at east and west side of the X37B brackets at following locations.

At Panel Points(PP) 104.25 and PP 104.75, Counter Weight side
At Panel Points(PP) 104.25 and PP 104.75, Cross Beam side.

At Panel Points(PP) 105.25 and PP 105.75, Counter Weight side
At Panel Points(PP) 105.25 and PP 105.75, Cross Beam side.

At Panel Points(PP) 106.25 and PP 106.75, Counter Weight side
At Panel Points(PP) 106.25 and PP 106.75, Cross Beam side.

At Panel Points(PP) 107.25 and PP 107.75, Counter Weight side
At Panel Points(PP) 107.25 and PP 107.75, Cross Beam side.

At Panel Points(PP) 108.25 and PP 108.75, Counter Weight side
At Panel Points(PP) 108.25 and PP 108.75, Cross Beam side.

Note: After performing the Dimensional Inspection, 8(Eight) locations was identified for installing the Retro-fit plates at Cross Beam side and at 4 (Four) locations was identified for installing the Retro-fit plates at Counter Weight side for X37B brackets.

The measurements were recorded in the Dimension Control Plan (DCP) generated by the QA Inspector and submitted to the Lead Inspector and Engineer for review and disposition.

Segment 12AW (Deck Panel and Edge Panel connecting weld)

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete

Joint Penetration (CJP) groove weld. The Weld joint was designated as CA3006-002. The welder identification was 040656 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-345-SMAW-4G(4F)-FCM-Repair-1. The piece mark was identified as Deck Panel to Edge Panel hold back weld at work point W2. ZPMC performed repair welding in accordance with Welding Repair Report B-WR19699 dated Dec 28, 2010.

Please reference the pictures attached for more comprehensive details.

Segment 12AW to Segment 12BW (Bottom Panel, Transverse Splice weld)

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBW12B-001. The welder identification was 040611, 046704 and 046709 and observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-345-SMAW-1G(1F)-FCM-Repair-1. The piece mark was identified as the Bottom Panel, at transverse splice. ZPMC performed repair welding in accordance with Welding Repair Report B-WR-19714 dated Dec 29, 2010.

Please reference the pictures attached for more comprehensive details.

Segment 12AE to Segment 12BE (Side Panel, Transverse Splice weld)

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBE12D-003. The welder identification was 044515 and observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-345-SMAW-4G(4F)-FCM-Repair-1. The piece mark was identified as the Side Panel, at transverse splice at Bike Path side. ZPMC performed repair welding in accordance with Welding Repair Report B-WR-19715 dated Dec 28, 2010.

Please reference the pictures attached for more comprehensive details.

Segment 12AE to Segment 12BE (Side Panel Corner Assembly, Transverse Splice weld)

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as CA6502-008. The welder identification was 044515 and observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-345-SMAW-4G(4F)-FCM-Repair-1. The piece mark was identified as the Side Panel, Corner Assembly at transverse splice at Bike Path side. ZPMC performed repair welding in accordance with Welding Repair Report B-WR-19715 dated Dec 28, 2010.

Segment 12AE (Deck Panel and Edge Panel connecting weld)

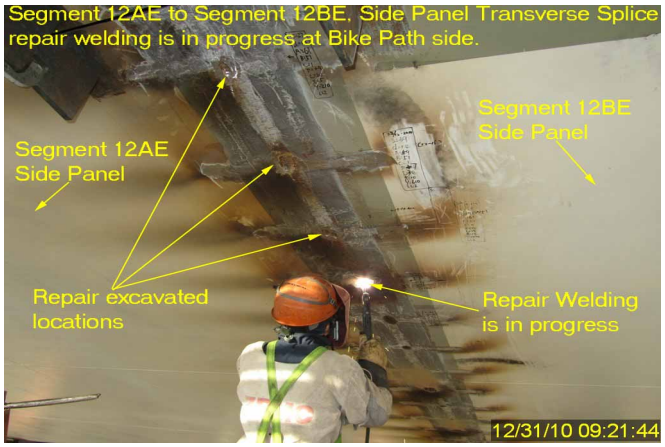
This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as CA6501-006. The welder identification was 050289 and was observed welding in the 2G (Horizontal) position using approved Welding Procedure

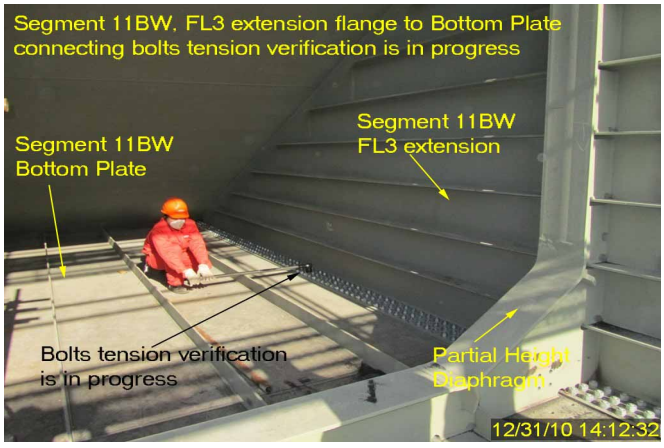
Specification WPS-345-SMAW-2G(2F)-FCM-Repair-1. The piece mark was identified as Deck Panel to Edge Panel hold back weld at work point E2. ZPMC performed repair welding in accordance with Welding Repair Report B-WR19716.

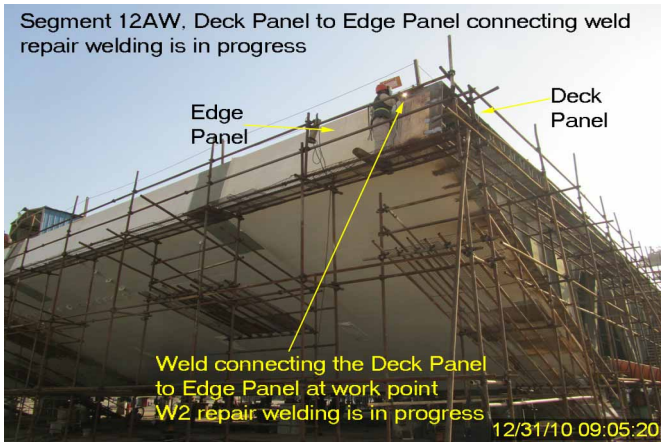
Segment 12BE (Deck Panel and Edge Panel connecting weld)

This QA Inspector observed the repair welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as CA3003-002. The welder identification was 050289 and was observed welding in the 2G (Horizontal) position using approved Welding Procedure Specification WPS-345-SMAW-2G(2F)-FCM-Repair-1. The piece mark was identified as Deck Panel to Edge Panel hold back weld at work point E2. ZPMC performed repair welding in accordance with Welding Repair Report B-WR19716.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.







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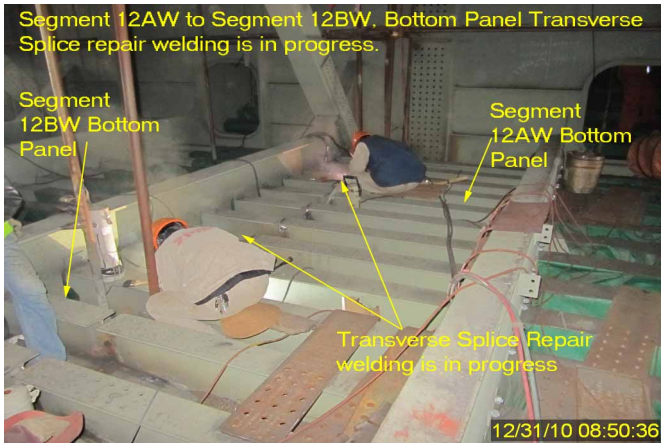

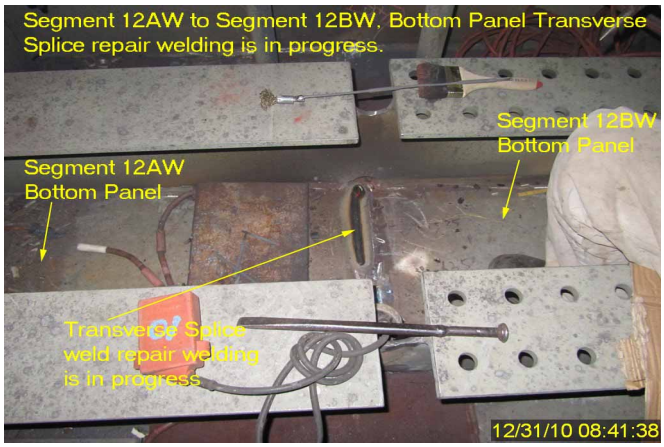

Summary of Conversations:

No relevant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 150000422372, who represents the Office of Structural Materials for your project.

Inspected By:	Math,Manjunath	Quality Assurance Inspector
Reviewed By:	Dsouza,Christopher	QA Reviewer